



November 26, 2014

Compliance Coordinator  
Nevada Division of Environmental Protection  
Bureau of Water Pollution Control  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701-5249

RE: Report of Spill of Treated Groundwater from Effluent Storage Tank  
NPDES Permit NV0023060  
Incident No. 141123-01

Dear Compliance Coordinator:

The Nevada Environmental Response Trust ("NERT" or the "Trust") maintains a National Pollutant Discharge Elimination System (NPDES) Permit NV0023060 for discharge of treated groundwater to the Las Vegas Wash as part of its on-going effort to capture and treat groundwater containing perchlorate and other contaminants of concern at the NERT site in Henderson, Nevada (the "Site"). Envirogen Technologies, Inc. ("ETI") is the operator of the groundwater extraction and treatment system ("GWETS") at the Site and Tetra Tech is the Trust's environmental consultant that provides oversight of ETI and the GWETS. Tetra Tech is submitting this letter on behalf of the Trust to provide written documentation of a release of treated groundwater from the treated groundwater effluent storage tank at the Site.

At 1:50 AM PST on Sunday, November 23, 2014, the effluent booster pump shut off due to a fault on the variable frequency drive (VFD). The influent to the GWETS was still being pumped and treated through the GWETS. Hence, the water level in the effluent tank continued to rise past the high-level sensor, but neither an alarm callout occurred nor did the sequence of events occur that would have put the GWETS into recycle. In addition, the sumps in the D-1 Building where the effluent tank is located do not have a call out alarm, and one sump pump does not start automatically. The result was that D-1 Building flooded from the effluent storage tank overflow.

Upon the ETI operator's arrival at 6:00 AM PST on November 23, 2014, it was discovered that the treated effluent groundwater was spilling out from the D-1 Building. The operator immediately turned on both the sump pumps and the backup effluent pump. The overflow from the effluent storage tank immediately stopped. During this incident, approximately 75% of the treated groundwater did correctly exit through the effluent discharge pipe via gravity. Per operating records, the effluent pump that failed was down for approximately 4 hours and 10 minutes. There was a release of an estimated 50,000 gallons of treated groundwater that did not go through the effluent pipe or was not captured though the D-1 Building sump containment system.

After a thorough investigation by ETI staff, it was discovered that a bad PLC input/output (I/O Card) prohibited the normal call out sequence from occurring when the water level reached the high level sensor in the effluent storage tank. As part of ETI's GWETS Preventative Maintenance Program (the "Program"), the card and the programming are tested on a monthly basis and were most recently tested on November 11, 2014, and demonstrated to be functioning correctly.

Tetra Tech reported this incident via telephone at approximately 9:50 PM PST on November 23, 2014, to the NDEP Spill Notification Line. This incident was assigned Spill Incident No. 141123-01. The Bureau of Corrective Actions was notified by email immediately following the call to the Spill Notification Line.

Per Section II.A.3.b. of the NPDES permit, a written report shall be submitted within 5 days of the release and include the following information.

**i. Time and date of discharge**

The effluent pump shut down at 1:50 AM PST on November 23, 2014. The effluent tank started overflowing shortly after that time. The exact time that treated groundwater began flowing from the D-1 Building is unknown, but estimated to be between 2:00 and 2:30 AM.

**ii. Exact location and estimated amount of discharge**

The release occurred on Site from the D-1 Building. The amount of the release is estimated to be 50,000 gallons based on an overflow period of up to 4 hours and 10 minutes, and accounting for 75% of the flow continuing in the effluent pipe to the Las Vegas Wash and the capacity of the D-1 Building sump containment system. The release never reached any drainages or waterways.

**iii. Flow path and any bodies of water which the discharge reached**

The release was absorbed into the soil immediately adjacent to the D-1 building and never reached any drainages or waterways.

**iv. The specific cause of the discharge**

The root cause of this incident was attributable to the following:

1. The failure of the VFD for the primary effluent pump;
2. Lack of automated controls that starts the backup effluent pump if the primary pump fails; and
3. An I/O Card failure which effectively disabled the effluent tank's high-level sensor.

**v. The preventive and/or corrective actions taken**

In response to this release and to minimize its reoccurrence, preventive measures that will be undertaken include:

1. ETI will update its Program to perform more frequent inspections of all computer components, including the I/O Card either through an automatic diagnosis or a manual check at the end of each shift.
2. ETI will update its Program and computer system logic to include additional contingencies in the event of multiple failures during unstaffed periods.
3. ETI will appropriately staff GWETS until the I/O Card is repaired and functionality of the high-level sensor is restored and verified.
4. ETI will install a level controller and automatic capabilities for the D-1 Building sumps. This will prevent water in the D-1 Building from accumulating and spilling outside of the D-1 Building.
5. ETI will add a system call out trigger if a D-1 Building sump pump is activated.
6. ETI will apply a modification to the computer system logic for the effluent pumps so they work together as lead and lag.

Please let me know if you have any questions. I can be reached at 720-931-9372 or via email at frank.johns@tetrattech.com.

Sincerely,

Tetra Tech, Inc.



Frank J. Johns, II  
Vice President and Principal Engineer

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